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MORPHOLOGICAL STUDIES OF HEPATITIS

Final Report

1965 - 1973

by

Fenton Schaffner, M. D.

Supported by

US Army Medical Research and Development Command
Fort Detrick, Frederick, Maryland 21701

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FINAL REPORT

This project is terminated at the end of the contract period. The effort in the last year has been mainly devoted to the study of hepatitis B antigen (HB Ag) in liver tissue. This was done in liver biopsy specimens obtained for histologic diagnosis from HB Ag positive patients with acute or chronic hepatitis. The tissue was studied by electron microscopy with and without incubation with antibody to HB Ag labeled with ferritin or with horse radish peroxidase. In chronic carriers of HB Ag with evidence of disease round particles about 30 nm in diameter were found in hepatocellular nuclei. In asymptomatic carriers of HB Ag with no disease, particles and rods 20 nm in diameter are found in profiles and vesicles of the smooth endoplasmic reticulum. Both the nuclear particles and the cytoplasmic particles reacted with labeled antibody indicating that both types of particles had similar antigenic determinants. A cooperative study has been carried out with Dr. Shalom Z. Hirschman concerning the biochemical nature of the small particles and rods of HB Ag and they appear to be strands of intertwined protein, the size of the particle depending on the degree of twisting of the protein strands.

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Hirschman, S. Z., Vernace, S., Schaffner, F.: An electron microscopic study of the polymorphism of hepatitis B antigen. J Infectious Dis., Nov. 1973 in press.

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